Appl. No.: 10/602,458 Filed: June 23, 2003

Page 2

Amendments to the Claims: the claims as amended are stated below.

- 1. (**Original**) A method comprising the step of:
- a) generating a hedge signal to avoid adaptation to at least one characteristic of an adaptive control system and/or a plant controlled by the adaptive control system.
 - 2. (Original) A method as claimed in claim 1 further comprising the steps of:
 - b) modifying a commanded state signal with the hedge signal; and
- c) generating a reference model state signal based on the commanded state signal modified with the hedge signal in the step (b).
- 3. (Currently Amended) A method as claimed in claim 2 further comprising the step of:
- d) generating a tracking error signal based on the reference model state signal and a plant state signal; and
- e) generating an adaptive control signal <u>based on the tracking error signal</u> to adapt control response of the adaptive control system.
- 4. (**Original**) A method as claimed in claim 1 wherein the hedge signal is generated in the step (a) based on a difference between a first signal derived from a plant model not having the characteristic, and a second signal derived from a plant model having the characteristic.
- 5. (**Original**) A method as claimed in claim 4 wherein the first signal is generated based on an input control signal and a plant state signal in addition to the plant model not having the characteristic, and the second signal is generated further based on a command control signal and a plant state signal in addition to the plant model having the characteristic.
- 6. (**Original**) A method as claimed in claim 5 wherein the input control signal is generated based on at least one of the commanded state signal, reference model state signal, a plant state signal, and an adaptive control signal.
- 7. **(Original)** A method as claimed in claim 6 wherein the command control signal is generated based on the input control signal modified by a control allocation and a control characteristic imposed by the controller.
- 8. (Currently Amended) A method as claimed in claim 4 [[where in]] wherein the second signal is generated based on an actuator state signal.

ATL01/12227365v1 018360/269884

Appl. No.: 10/602,458 Filed: June 23, 2003

Page 3

- 9. (Original) A method as claimed in claim 5 further comprising the step of:
- b) generating a display based on the input control signal, an operator generating the command control signal based on the display.
- 10. (**Original**) A method as claimed in claim 1 wherein the plant is an aircraft and/or spacecraft.
 - 11. (**Original**) A method as claimed in claim 1 wherein the plant is an automobile.
- 12. (**Original**) A method as claimed in claim 1 wherein the plan is an unmanned vehicle.
- 13. (Currently Amended) In an adaptive control system for controlling a plant, a hedge unit coupled to receive at least one control signal and a plant state signal, the hedge unit generating a hedge signal based on the control signal, the plant state signal, and a hedge model including a first model having a characteristic to which the adaptive control system is not to adapt, and a second model not having the characteristic to which the adaptive control system is not to adapt, the hedge signal used in the adaptive control system to remove <u>an effect of</u> the characteristic from a signal supplied to an adaptation law unit of the adaptive control system so that the adaptive control system does not adapt to the characteristic in controlling the plant.
- 14. (**Original**) An adaptive control system as claimed in claim 13 wherein the characteristic is a time delay between generation of the commanded state signal by the controller at a time, and receipt by the controller of the plant state signal resulting from the commanded state signal generated at the time.
- 15. (**Original**) An adaptive control system as claimed in claim 13 wherein the characteristic is a time delay between generation of a state by the plant and sensing of the state of the plant by the sensor to generate the plant state signal.
- 16. (**Original**) An adaptive control system as claimed in claim 13 wherein the characteristic pertains to a control limit of the actuator used to control the plant.
- 17. **(Original)** An adaptive control system as claimed in claim 13 wherein the control limit pertains to actuator end points.
- 18. (**Original**) An adaptive control system as claimed in claim 13 wherein the control limit pertains to actuator dynamics.

ATL01/12227365v1 018360/269884

Appl. No.: 10/602,458 Filed: June 23, 2003

Page 4

- 19. (**Original**) An adaptive control system as claimed in claim 13 wherein the control limit pertains to a rate limit of the actuator.
- 20. (**Original**) An adaptive control system as claimed in claim 13 wherein the control limit pertains to quantization effects associated with the actuator.
- 21. (**Original**) An adaptive control system as claimed in claim 13 wherein the plant is an aircraft and/or spacecraft.
- 22. (**Original**) An adaptive control system as claimed in claim 13 wherein the plant is an automobile.
- 23. (**Original**) An adaptive control system as claimed in claim 13 wherein the plant is an unmanned vehicle positioned remotely from an operator.

ATL01/12227365v1 018360/269884